

CLAIMS

1. An internal combustion engine having a plurality of cylinders containing pistons connected with a crankshaft for transmitting power, the cylinders having closed ends, intake and exhaust ports communicating with the cylinders, valves operable to open and close the ports to air and exhaust
 5 flow to and from the cylinders, a pressure oil lubrication system operative to lubricate at least the cylinders, pistons and crankshaft of the engine, and the improvement comprising:

a valve actuating system including hydraulic actuators operable to actuate the valves; and

10 a pressure oil hydraulic system separate from the lubrication system and operative to selectively supply pressure hydraulic oil to the hydraulic actuators to actuate the valves in a predetermined manner.

2. An engine as in claim 1 wherein the hydraulic system includes a reservoir located below the actuators and positioned to receive oil discharged from the actuators and returned by gravity flow to the reservoir.

3. An engine as in claim 2 wherein the cylinders are contained in a cylinder block and the reservoir is contained within the cylinder block.

4. An engine as in claim 3 wherein cylinder block includes two cylinder banks arranged in a V and forming a valley between the cylinder banks, and the reservoir is contained in the valley

5. An engine as in claim 1 wherein the hydraulic system includes a high pressure oil pump operative to draw oil from a reservoir and supply pressurized oil to the actuators to actuate the valves.

6. An engine as in claim 5 wherein the high pressure oil pump is drivably connected to the crankshaft for driving the pump from the crankshaft

7. An engine as in claim 5 wherein the hydraulic system further includes an oil filter and an oil cooler connected between the high pressure oil pump and the actuators.